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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/034,320

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(PX1401-US/SSD)

8898

7590

05/08/2003

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EXAMINER

LEE, GRANVILL D

ART UNIT

PAPER NUMBER

2825

DATE MAILED: 05/08/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/034,320

Applicant(s)

PARK ET AL.

Examiner

Granvill D Lee, Jr

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 28 December 2001.
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-20 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-17, 19 and 20 is/are rejected.
- 7) ☒ Claim(s) 18 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____.
- 4) ☐ Interview Summary (PTO-413) Paper No(s). _____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____.

DETAILED ACTION***Drawings***

Figure 1 should be designated by a legend such as --Prior Art-- because only that which is old is illustrated. See MPEP § 608.02(g). A proposed drawing correction or corrected drawings are required in reply to the Office action to avoid abandonment of the application. The objection to the drawings will not be held in abeyance.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 1, 9 and 20 are rejected under 35 U.S.C. 103(a) as being unpatentable over Hwang (US Pat. 6,034,539) in view of Shau (US Pat. 6,427,222).

In view of claims 1, 9 and 20, Hwang discloses a method of transmitting a signal to an option pad of an integrated circuit, comprising the steps of electrically isolating one of commonly connected power pins of the IC, and connecting the pin to the option pad to thereby transmit a control signal from outside through the electrically isolated power pin to the option pad. However, Hwang fails to include a control signal from the IC to the option pad. Shau

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teaches a control signal used to transmit to a bonding pad. Therefore, it would have been obvious to a person of ordinary skill in the art at the time of the invention to modify the teachings of Hwang with those of Shau ultimate goal of performing multiple functions or testing. Shau suggests that using a control signal allows the device to be tested and depending on the connections (options) made, the circuits can be tested in many ways including a series test (Col. 5 lines 5-35).

In view of claims 2-3 and 10-11, Hwang shows a number of power or ground pads connected to the option pad (Fig. 4a/4b #210).

In view of claims 4 and 12, Shau indicates that conventional burn-in testing can be done on the package level (Col. 1 lines 40-45).

In view of claims 5 and 13, Shau reveals that the control signal can be an external signal to perform the burn-in test (Col. 3 lines 40-50).

In view of claims 6 and 14, Shau performs a burn-in test (Col. 6 lines 45-50), input/output testing (Col. 1 lines 20-25) and supports parallel testing (Col. 3 lines 10-15).

Claims 7-8, 15-16 and 19 are rejected under 35 U.S.C. 103(a) as being unpatentable over Hwang (US Pat. 6,034,539) in view of Shau (US Pat. 6,427,222) in further view of White (US Pat. 5,880,596).

In view of these claims, Hwang discloses a method of transmitting a signal to an option pad of an integrated circuit, comprising the steps of

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electrically isolating one of commonly connected power pins of the IC, and connecting the pin to the option pad to thereby transmit a control signal from outside through the electrically isolated power pin to the option pad. Shau uses a control signal to transmit to a bonding pad. But, neither inventor shows an integrated circuit using a static random access memory (SRAM) in a ball grid arrangement in the design of the IC.

White discloses an IC design, where the IC uses a SRAM circuit (#210) and the packaging is completed using solder ball technology (Col. lines 30-35.). Therefore, it would have been obvious to a person of ordinary skill in the art at the time of the invention to modify the teachings of Hwang and Shau with those of White in order to specify which roles the IC performs and how the IC is ultimately packaged. White clearly states that the need for using a SRAM resides in using option pad concepts where a plurality of roles now can be performed (Col. 4 lines 50-55), this concept is realized only by the proper packaging technique (Col. 6 lines 30-45).

In view of claim 19, White uses an inverter (#215) in the construction of a IC design.

Claim 17 is rejected under 35 U.S.C. 103(a) as being unpatentable over Hwang (US Pat. 6,034,539) in view of Shau (US Pat. 6,427,222) in further view of Rosenthal (US Pat. 5,051,615).

In view of this claim, Hwang discloses a method of transmitting a signal to an option pad of an integrated circuit, comprising the steps of electrically isolating one of commonly connected power pins of the IC, and connecting the pin to the option pad to thereby transmit a control signal from outside through the electrically isolated power pin to the option pad. Shau uses a control signal to transmit to a bonding pad. However, these inventors fail to use an electrostatic discharge device (ESD) in conjunction with the option pad. Rosenthal in making a comparator circuit, uses a ESD device (#46) in series with an option pad (#48).

Therefore, it would have been obvious to a person of ordinary skill in the art at the time of the invention to modify the teachings of Hwang and Shau with those of Rosenthal in order to establish some mechanism for protecting the circuit against charge (Col. 5 lines 15-25), which is the sole reason for using any ESD device in any circuit.

Allowable Subject Matter

Claim 18 is objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Contact Information

Any inquiry concerning this communication or earlier

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communications for the examiner should be directed to Granvill Lee whose telephone number is (703) 306-5865. The examiner can be normally reached on Monday thru Thursday from 7:00 am to 5:30 pm.

If attempts to reach the examiner by telephone are not successful, the examiner's supervisor, Matthew Smith can be reached on (703) 308-1323. The fax phone number for this group is (703) 308-7722.

Any inquiry of a general nature relating to status or otherwise should be directed to the receptionist whose telephone number is 703-308-1782.

Examiner
Granvill Lee
Art Unit 2825

GI
4/29/03


MATTHEW SMITH
SUPERVISORY PATENT EXAMINER
TECHNOLOGY CENTER 2825